

Ketohexokinase (TT-I): sc-100381

BACKGROUND

The hexokinases utilize Mg-ATP as a phosphoryl donor to catalyze the first step of intracellular glucose metabolism, the conversion of glucose to glucose-6-phosphate. Ketohexokinase (hepatic fructokinase) belongs to the carbohydrate kinase pfkB family and requires potassium. It functions in the metabolism of dietary fructose in mammals, catalyzing the conversion of fructose to fructose-1-phosphate. Ketohexokinase is expressed most abundantly in kidney, liver, pancreas and spleen, while lower levels are seen in muscle, eye and brain. Mutations in KHK, the gene encoding for Ketohexokinase, cause fructosuria, a benign defect of intermediary metabolism characterized by the excretion of fructose in the urine.

REFERENCES

1. Khachadurian, A.K. 1964. Nonalimentary fructosuria. *Pediatrics* 32: 455-457.
2. Boesiger, P., Buchli, R., Meier, D., Steinmann, B. and Gitzelmann, R. 1995. Changes of liver metabolite concentrations in adults with disorders of fructose metabolism after intravenous fructose by 31P magnetic resonance spectroscopy. *Pediatr. Res.* 36: 436-440.
3. Bonthron, D.T., Brady, N., Donaldson, I.A. and Steinmann, B. 1995. Molecular basis of essential fructosuria: molecular cloning and mutational analysis of human Ketohexokinase (fructokinase). *Hum. Mol. Genet.* 3: 1627-16231.
4. Hayward, B.E. and Bonthron, D.T. 1998. Structure and alternative splicing of the Ketohexokinase gene. *Eur. J. Biochem.* 257: 85-91.
5. Funari, V.A. 2005. Genes required for fructose metabolism are expressed in Purkinje cells in the cerebellum. *Brain Res. Mol. Brain Res.* 142: 115-122.
6. Fabbro, C. 2005. Analysis of regulatory regions of EMILIN-1 gene and their combinatorial contribution to tissue-specific transcription. *J. Biol. Chem.* 280: 15749-15760.

CHROMOSOMAL LOCATION

Genetic locus: KHK (human) mapping to 2p23.3.

SOURCE

Ketohexokinase (TT-I) is a mouse monoclonal antibody raised against recombinant Ketohexokinase of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

Ketohexokinase (TT-I) is recommended for detection of Ketohexokinase isoforms A and C of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Ketohexokinase siRNA (h): sc-60878, Ketohexokinase shRNA Plasmid (h): sc-60878-SH and Ketohexokinase shRNA (h) Lentiviral Particles: sc-60878-V.

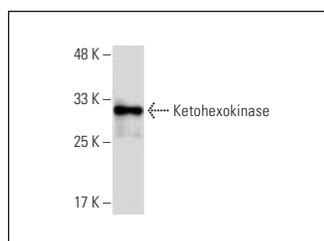
Molecular Weight of Ketohexokinase: 33 kDa.

Positive Controls: human spleen extract: sc-363779.

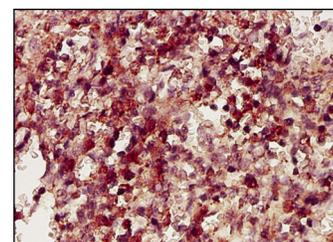
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Ketohexokinase (TT-I): sc-100381. Western blot analysis of Ketohexokinase expression in human spleen tissue extract.



Ketohexokinase (TT-I): sc-100381. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human spleen tissue showing cytoplasmic localization.

RESEARCH USE

For research use only, not for use in diagnostic procedures.